

GUIDELINES FOR BCS GRADUATE STUDENTS

N.B. All documents and files during the three years must be placed by each student in an individual Ph.D. DROPBOX folder that will be opened upon enrollment

Deadlines (not taking into account delays due to the COVID-19 emergency or later “enrollments”);(if an extension has been requested, for example by 3 months, the final deadlines are postponed by exactly three months; however, deadlines for documents for admission to next year are not post-poned)

First Year

- **Immediately upon enrollment:**
 - ✓ activate the institutional e-mail address by filling out the online form [at this link \[https://mail.uniroma1.it/Schedaregistrazione.nsf/didattica?openform\]](https://mail.uniroma1.it/Schedaregistrazione.nsf/didattica?openform). You will receive a confirmation Email and the address after about 24 h.
 - ✓ deliver a filled PhD enrollment form available online ([online form](#)). There, provide an Email address (it can be the Sapienza institutional address but not necessarily) to open an individual Dropbox folder that will be shared with the PhD Coordinator and Secretary a Silvia Lopizzo (optional: with the supervisor, tutors and reviewers; the student will take care of extending the sharing). In this folder the student must place all the authorization requests, documents, reports, forms, Powerpoint presentations etc.... Send the file to the coordinator and the secretary Silvia Lopizzo as an attachment to the Email message with Object: *Ph.D Student form Nome Cognome*
 - ✓ for those who perform their thesis in an external institution with respect to the BBCD Department: appoint a tutor among the members of the PhD Teaching Board.
 - ✓ Go the site for the online management of the PhD Course <https://phd.uniroma1.it/dottorati/login.aspx> and fill in the required information. Also indicate your supervisor, and if applicable, your tutor internal to the Ph.D committee. You can also indicate a **provisional** title for your thesis.
- **around the end of March:** Project, in a written form (see instructions at pag. 5).
- **around middle of April:** oral presentation of the project (10 min + 5; according to the scheme presented for the written project) preferably in English
- **by October 5th (no delays for requested “proroghe”):** Annual written report (according to the instructions on pages 6-15), signed by the supervisor(s) /guiding teacher; the document **must also be added** to the shared individual Dropbox folder. If not already done at the time of submission of the written doctoral project, indicate the name of an internal auditor/reviewer chosen among the members of the Ph. D. Board or, if deemed appropriate, external. The reviewer is a qualified professor/researcher and cannot be a collaborator in the research project of the doctoral student and must not have past publications or publications related to the results of the doctorate work (no conflict of interest). The doctoral student will send the first or second year report to the auditor/reviewer who will have to evaluate it (if desired, it may also allow access to the reviewer to the individual Dropbox folder). Your supervisor / lecturer will guide you in choosing the auditor. Reviewers will have to send their opinion with any advice and comments to the graduate student, the supervisor, the secretary Silvia Lopizzo and the Coordinator of the Doctorate by October 20th.
- **by October 5th, a Report of activities** (as a single file for the entire Ph.D course to be updated each year) signed by the supervisor(s) /guiding teacher with the list of seminars, congress communications, list of publications, internships abroad and in Italy, awards, ...) (see format at page 16). The document **must be placed into** the shared individual Dropbox folder. The doctoral student will send the first or second year report to the auditor/reviewer. Reviewers will have to evaluate this report (together with the annual scientific report), and send their evaluation to the graduate student, the supervisor, the secretary Silvia Lopizzo and the Coordinator of the Doctorate by October 20th.
- **by the deadline that will be indicated by the Sapienza Doctorate Office (around end of October first weeks of November but may be also much later):** access INFOSTUD using the INFOSTUD credentials, click on DOCTORATES and then proceed to fill in the “Ph.D. student form” (scheda dottorando) according to the instruction (see page 17). **KEEP A COPY OF THE FORM OR OF THE INFORMATION IN IT, and add the file to your individual Ph.D. Dropbox folder!**
- **by approximately the end of November:** Oral presentation of the results (12 min + 3), preferably in English

Second year:

- **by October 5th :** Written annual report (according to the instructions at pagg. 5-14; see also instructions for First year)
- **by October 5th, the Report of activities** (the single file for the entire Ph.D course) newly signed by the supervisor(s) /guiding teacher with the list of seminars, congress communications, list of publications,

internships abroad and in Italy, awards, ...) (see format at page 16; see also instructions for First year)). The document **must also be in** the shared individual Dropbox folder.

- o **by the deadline that will be indicated by the Sapienza Doctorate Office (around end of October first weeks of November but may be also much later):** access INFOSTUD using the INFOSTUD credentials, click on DOCTORATES and then proceed to fill in the “Ph.D. student form” (scheda dottorando) according to the instruction (see page 17). **KEEP A COPY OF THE FORM OR OF THE INFORMATION IN IT**, and add the file to your individual Ph.D. Dropbox folder!
- o **by approximately the end of November:** Oral presentation of the results of the year with a short summary of the results of the previous year (15+5 min), in English.

Third year:

Sapienza indications:

https://www.uniroma1.it/sites/default/files/field_file_allegati/circolare_scadenze_esami_fin ali_coordinatori_con_prot.2022_0.pdf

ADEMPIMENTO	I SESSIONE	II SESSIONE	III SESSIONE
Individuazione valutatori esterni	Entro 30 giugno anno precedente	Entro 30 ottobre anno precedente	Entro 28 febbraio
Consegna tesi ai valutatori esterni	Entro 31 ottobre anno precedente	Entro 28 febbraio	Entro 30 giugno
Giudizio valutatori esterni	Entro 15 dicembre anno precedente	Entro 15 aprile	Entro 15 agosto
Nomina Commissione giudicatrice	1 mese prima della discussione	1 mese prima della discussione	1 mese prima della discussione
Discussione tesi e conseguimento titolo	Entro 30 gennaio	Entro 30 maggio	Entro 30 settembre

N.B.: “entro” (“by”) non significa “il” (“on”)

- o **by June 15th:** identify and communicate the names of the external reviewers/evaluators using the dedicated form. In addition, in agreement with the supervisor and Tutor (for external theses), propose at least one name of a possible member for the final exam Committee. **The names must be approved by the supervisor and the internal reviewer.** For this information, a dedicated form to be filled can be downloaded [from this page](#) or directly [at this link](#).
The evaluators must be at least two [at least one university professor, also belonging to foreign institutions, external to the subjects that take part in the release of the doctoral degree, including contract professors from other Universities, professors emeritus and researchers. The same evaluator can have multiple theses. They must not be collaborators in the research project object of the thesis of the student. For doctoral candidates requesting the additional title of Doctor Europaeus, see pages 19-20 (external reviewer must be of foreign Institutions). Evaluators must be approved by the Board. The reviewers will receive the official invitation and subsequently the thesis through the online platform (see below) and must provide their opinion and comments by December 1st. For the proposed member(s) for the Final Exam Committee, they cannot be the same as the evaluators.
- o **by the deadline that will be indicated by the Sapienza Doctorate Office (around end of October first weeks of November but may be also much later):** access INFOSTUD using the INFOSTUD credentials, click on DOCTORATES and then proceed to fill in the activity sheet (see instructions at page 17). **KEEP A COPY OF THE FORM OR OF THE INFORMATION** and add the file to your individual Ph.D. Dropbox folder!
- o **by October 13th** each graduate student must do the following:
 - 1) Indicate by Email the session chosen to the Coordinator and Secretary, in agreement with your supervisor (in cc).
 - 2) upload the pdf of the thesis on the Ph.D. Course management platform <https://phd.uniroma1.it/dottorati/login.aspx>, using the “**Upload thesis**” function, using the credentials used to access INFOSTUD (matricola and password). The thesis will be prepared according to the indications presented on page 20 and include Tables, figures and captions in the "main text". It may include "Supplemental" sections.
 - 3) Upload a **SYNOPSIS OF THE THESIS** (2-3 PAGES, in English) on the Ph.D. Course management platform <https://phd.uniroma1.it/dottorati/login.aspx>, using the “**Upload files**” function.
 - 4) Upload the final **Report of activities** (the updated single file for the entire Ph.D course, newly signed by the supervisor) on the Ph.D. Course management platform <https://phd.uniroma1.it/dottorati/login.aspx>, using the “**Upload files**” function . The document will be placed also in the shared individual Dropbox folder.

N.B. 2, 3 and 4 are by October 13th for the students that choose the first exam session.

- **Revise the thesis according to the reviewer indications.** The revised version of the thesis has to be uploaded on the Ph.D. Course management platform, using the “**Upload thesis**” function, by December 28th for the first exam session. The new document **will replace the previous version. Theses that needed minor revision will not be sent to the reviewers again; those with major revisions will undergo again the revision process.**
- **from the end of November to middle January (to be defined):** Oral presentation of the results of the 3 years (20 min+5), in English.
- **All document (Final Thesis, Synopsis, Report of activities) will be sent to the Committee for the final exam through the platform by the Secretariate (not later than one month before the final exam).**

- **Ph.D. Thesis (suggested format at pag. 18)**

- *Rules up to the last cycle:
From Article 12 of the Doctoral Regulations - Doctoral Thesis:
Candidates, after the expiration of the legal duration of the PhD program, must submit to the evaluation and discussion of the thesis for the award of the Ph.D. degree by 28 February of each year. The admission to the final exam, accompanied by the presentation of the Board, must be communicated to the Research Doctorate Officer at least one month before the date set for the discussion, pursuant to art. 13 paragraph 7.*
- *The title of research doctor, abbreviated with the words: "Dott. Ric." or "Ph.D.", is issued following the positive evaluation of a research thesis that contributes to the advancement of knowledge or methodologies in the chosen field of investigation. The doctoral thesis, accompanied by a summary in Italian or in English [other than the summary / summary included in the thesis, and about 2-3 pages, note of the coordinator], is written in Italian or English or in other language authorization of the Teaching Committee. The thesis, to which a doctoral candidate's report is attached on the activities carried out during the Ph.D. program and on possible publications, is evaluated by at least two highly qualified teachers, appointed by the Academic Board, hereinafter referred to as external evaluators/reviewers, belonging to institutions that are external to the subjects who have contributed to the award of the PhD. The evaluators express an analytical judgment written on the thesis and propose admission to the public discussion or postponement for a period of no more than six months if they consider significant additions or corrections necessary. After this period, the thesis is in any case admitted to the public discussion, accompanied by a new written opinion of the same evaluators, made in light of any corrections or additions made. The public discussion takes place before a commission whose composition is defined by art. 13 of the Doctorate Regulations. At the end of the discussion, the thesis, with motivated written collegial judgment, is approved or rejected. The commission, with unanimous vote, has the faculty to attribute the praise in the presence of results of particular scientific importance. The final PhD examination can be taken only once.*
- *After the final discussion, it is mandatory for PhDs to upload their Thesis in the IRIS data bank, in PDF format (ONLY the THESIS) according to the instructions available at https://www.uniroma1.it/sites/default/files/Vademecum%20IRIS_0.pdf. To allow verification and validation of the uploads, the front page of the Thesis must contain it must contain **all** the information.*

See also: Thesis Format and Logo (Sapienza's suggestions)

- **Career certificate**

Once registered, you can download the PhD Career Certificate as follows:

- Access INFOSTUD
- Click on DOCTORATES
- Click on CERTIFICATES
- Click on PhD-CAREER

- **Seminars, lessons and other teaching activities.**

At least 10 seminars a year are required, among those that will be indicated or others of your interest. The presence must be validated by the signature of a member of the college (including your supervisor) in the appropriate booklet of teaching activities prepared by the Board. The list with the seminars and courses attended is included in the Report of Activities and uploads in the individual shared Dropbox folder.

In addition, courses are generally organized (for example scientific English, Biostatistics, other Courses dedicated to advanced methodologies) within the framework of the Doctoral School in Biology and Molecular Medicine (BEMM), which also includes our PhD Program. The educational initiatives of the previous years are visible at the link <https://elearning2.uniroma1.it/course/view.php?id=3221>. Attendance at these courses, which will be announced to you, must also be documented in the Report of Activities.

It is recommended, as a formative moment of great importance, participation, as listeners, but also as organizers, at the symposia organized by the BEMM graduate students, advertised at the link above.

- **Budget for the graduate students.**

Doctoral students, including those without scholarship, but not those who perform their thesis in the industries, have the availability for a budget of about 2500 Euros to be spent preferably on the second and third year, for

internships in National and International laboratories (see below, “Stages in Italy and abroad”), Schools and Courses, or participation to National and International Meetings/Congresses. All these initiatives must be authorized by the supervisor and the Coordinator of the Ph.D. course at least 10 days before the start day. For participation to Meeting/Congress, a communication/poster (countersigned by the supervisor) MUST be presented by the PhD student and the abstract sent to the Coordinator when the authorization is requested. The communication/poster is not required for on-line only meetings/congresses that cost up to 100 Euros.

- **Stages in Italy and abroad**

PhD students can spend internships in laboratories different from those in which they normally perform their thesis, using the form available online ([Authorization STAGE BCS - Form](#)). **An acceptance letter of the host laboratory** (to be submitted at least 10 days before departure) must be countersigned by the supervisor and the Coordinator of the PhD course (original or digital signature); **a research project** must be also presented (to be delivered at least 10 days before of departure) that illustrates why the internship/stage is important for the thesis work (the format used for the EMBO Short- Term Fellowship is recommended). The coordinator authorizes, within the permitted limits.

In particular, PhD students are strongly encouraged to spend **at least 3 months** in a foreign laboratory. This is a requirement for requesting the additional title of Doctor Europaeus. Further periods, even in the third year, if they are essential for the development of the thesis project, are evaluated positively.

N.B. Periods **abroad** (not in Italy) of at least 7 days may be supported by a 50% increase of the PhD scholarship (only for PhD students with Sapienza scholarships). The increase will be paid upon return. For stages abroad, only travel expenses can be reimbursed by the Ph.D. School, not lodging and meals. PhD students are strongly encouraged to seek external financial support (Sapienza, EMBO short fellowship, MIUR)

To obtain the payment, at the end of the stage abroad, **besides the authorization by the Coordinator (obtained before departure, see above)**, a further declaration by the host institution that proves the permanence and the activity is necessary that must be countersigned by the Coordinator of the Doctorate. Signature by the Coordinator must be in original in both documents (digital signature is accepted; N.B. the date of the prior authorization must also be prior to the start date of the research period abroad). The documents will be delivered to the Sapienza Ph.D Office.

- **Teaching activity**

See “Regolamento Dottorato di Sapienza”.

BCS PhD students cannot carry out integrative teaching or tutoring activities during the first year of the Ph.D. course. Starting from the second year, they can carry out integrative teaching and tutoring activities, including paid ones. integrative teaching has the upper limit of 40 hours per year. No limit for tutoring.

- **Additional Certificate of Doctor Europaeus**

See [Instructions and form](#) available on line

- **Ph.D. Status and insurance coverage**

The status of Ph.D. student ends when the title is awarded. The student has insurance coverage until then.

- **Upload of research products (publications, chapters, Congress communications etc.) on the IRIS data bank**

All relevant work products **must** be uploaded on IRIS according to the instructions

(https://www.uniroma1.it/sites/default/files/field_file_allegati/linee_guida_inserimento_prodotti_eng.pdf)

Format for the presentation of the research project (around March of the first year):

Ph.D. RESEARCH PROJECT

STUDENT:

**Ph.D. Course in Cell and Developmental Biology
Cycle**

Supervisor

(Affiliation of the supervisor, for an external thesis)

Tutor (for external thesis only, chosen among the members of the Ph.D. Board)

Reviewer for the evaluation of the Project and the 1st and 2nd year annual reports:

(name, email)

[The reviewer will be preferably chosen among the members of the Ph.D. Board. The internal reviewer must not appear in the publications of the graduate student (no conflict of interest). The reviewer will provide its evaluation, necessary for the teaching board to decide the admission of the student to the following year, to the Coordinator and Silvia Lopizzo in due time. We expect a thorough review, with suggestions, comments and criticisms, to be included in the evaluation letter. The letter will be sent also to the Ph.D. student (by the reviewer).]

(in English)

Margins (2 cm all sides)

Headings: Arial,

Text: Palatino Linotype 11, space 1.15

Text in Figures: Helvetica o Arial, well readable

TITLE

Abstract (max 250 words)

State of the art

Biological Significance (max 200 words)

Objectives (general and/or specific)

Methodology (for each objective)

(Max 2.5 pages)

References

IMPORTANT:

The text of any report, including the project proposal, must be checked for plagiarism. Here are indicated some useful links:

<https://smallseotools.com/plagiarism-checker/>

<https://www.quetext.com/>

<https://edubirdie.com/plagiarism-checker>

Instructions for the annual report of the research (pages 6-15):

The report will be organized like a manuscript (see format in the next page) to be submitted for publication (figures and tables at the end) and can be divided into different parts:

General Summary of the work performed during the year (max 300 words). Necessary for the annual report required for the renewal of the Ph.D Course. Thank you for your help.
Note that in the annual Ph.D. student form required by the Sapienza Ph.D. Office you need to fill this (English, not in first person; do not repeat In the xx semester...):

Descrizione proprie Attività di Ricerca

I trimestre
II trimestre
III trimestre
IV trimestre

Part I: Work as a main author

Part II, III,: Work as a co-author

The different parts must be written exclusively according to the style of a manuscript to be submitted to publication (obviously under preparation).

The report, in the years following the first, in each part, will be "incremental", unless part of the work has been completed. In the Results section, in the years following the first one, the results of the previous year will be highlighted in gray.

Text: Times New Roman 11
Figures Helvetica o Arial, well readable
Spacing 1,15
Margins: 2,5 cm

(For the content, see detailed instructions on the following pages)

N.B. Negative results must be included in the report and are not a problem!

In the annual report, as final pages, activities (the same as reported in the file Report of Activities) have to be listed including:

- Oral Communications at conferences
- Posters
- Awards
- Patents
- Periods abroad
- Publications
- Other noteworthy activities:

IMPORTANT:

The text of any report, including the project proposal, must be checked for plagiarism. Here are indicated some useful links:

<https://smallseotools.com/plagiarism-checker/>
<https://www.quetext.com/>
<https://edubirdie.com/plagiarism-checker>

Annual research report (by October 5th)

Sapienza, Università di Roma
Ph.D. Course in Cell and Developmental Biology
Cycle
Year (1° or 2°)

Name of the Ph.D. student
Supervisor(s)
Affiliation of the supervisor(s)

Reviewer of the annual research report:

General Summary of the whole work performed (max 300 words)

Part I : Work as a main author

TITLE

Sommario Inglese (max 300 words)

Introduction (max 1200 words)

Results

Discussion (Max 1500 words)

References

Tables

Figures

Supplemental Information

Supplemental Tables and Figures

Methods

Glossary (optional)

Part II, III, : Work as a co-author

TITLE

Sommario Inglese (max 300 words)

Introduction (max 1200 words)

Results of the other authors (summarized, max 1000 words in total) in which you include your results (described fully as in paper-like style)

Discussion of your results in the context of the entire work (Max 1000 words)

References

Tables

Figures with legends

Supplemental Information

Supplemental Tables and Figures

Methods

Glossary (optional)

DETAILED INSTRUCTIONS FOR WRITING THE REPORT (*relazione annuale*)

Gene symbols should be italicized; protein products of the loci are not italicized. Nonstandard abbreviations should be defined when first used in the text. Use of abbreviations should be kept at a minimum.

Summary

It should not exceed 300 words, should contain no references, and should be written as a single paragraph that summarizes the background to the study, the key results, and the conclusions. It should clearly convey the conceptual advance and significance of the work to a broad readership. We discourage novelty claims (e.g., use of the word "novel") because they are overused, tend not to add meaning, and are difficult to verify.

Introduction

Max 1200 word. The Introduction must be written from the standpoint of biologists without special knowledge. Good introductions are succinct, presenting only the background information needed for readers to understand the motivation for the study and the results. This section should end with a brief statement of what has been achieved. [NON SCOPIAZZATE PEZZI INTERI DAI LAVORI PUBBLICATI! SI CHIAMA PLAGIO!]

Results

PAPER-STYLE!! Learn from published (high level) papers the best way to describe your experiments and your data!

This section should be divided into subsections with short, informative headings. Good subheadings convey information about the findings, so we encourage you to be specific. For example, say "Factor X requires Factor Y to function in Process Z" rather than "Analysis of Factors X and Y using Approach Q." We recommend that you use similar language in your figure titles for clarity and structural harmony. Footnotes should not be used.

Discussion

The Discussion should explain the significance of the results and place them into a broader context. It is often helpful to the reader to indicate the directions in which the work might be built on going forward. It should not be redundant with the Results. The Discussion may contain subheadings and can be combined with the Results section.

Results and Discussion

The Results and Discussion may be combined or kept separate and may be broken into subsections with short informative subheadings. The final paragraph should summarize the main findings of the research and their implications. Footnotes should not be used.

References

References should include only articles that are published or in press. For references to in press articles, please confirm with the cited journal that the article is in fact accepted and in press, and include a DOI number and scheduled online publication date. Unpublished data, submitted manuscripts, abstracts, and personal communications should be cited within the text only and not included in the References list. Personal communication should be documented by a letter of permission. Submitted articles should be cited as unpublished data, data not shown, or personal communication.

In-text citations should be written in Harvard style and not numbered, e.g., "Smith et al., 2015; Smith and Jones, 2015."

Please use the style shown below for references. Note that "et al." should only be used after ten authors.

Article in a periodical: Sondheimer N and Lindquist S (2000). Rnq1: an epigenetic modifier of protein function in yeast. Mol. Cell 5, 163–172.

Article in a book: King SM (2003). Dynein motors: Structure, mechanochemistry and regulation. In Molecular Motors, M. Schliwa, ed. (Weinheim, Germany: Wiley-VCH Verlag GmbH), pp. 45–78.

An entire book: Cowan WM, Jessell TM and Zipursky S.L. (1997). Molecular and Cellular Approaches to Neural Development (New York: Oxford University Press).

Tables

- Tables should include a title, and footnotes and/or legend should be concise. If bold or italic font is used within a table to indicate some feature of the data, please give an explanation of its usage in the legend.
- All abbreviations within a table must be defined in the table legend or footnotes.
- Footnotes should be listed with superscript lowercase letters, beginning with "a." Footnotes may not be listed with numbers or symbols.

Figures with legends

Legends should accompany figures. Strictly refer to literature style (high level papers) for describing the results.

Each figure legend should have a brief title that describes the entire figure without citing specific panels, followed by a description of each panel. For any figures presenting pooled data, the measures should be defined in the figure legends (for example, "Data are represented as mean \pm SEM."). Each legend should refer to any supporting items in the Supplemental Information (e.g., "See also Figure S1.>").

Learn from published papers (high level) the best way to show your data!

. The figure should be paper-style. Standard widths for figures: 1 column, 85 mm; 1.5 column, 114 mm; and 2 column, 174 mm (the full width of the page). You can combine panels in the same figure (again, paper-style). Figures can occupy the whole length of the page and legend may be placed in a separate page.

Different panels should be labeled with capital letters, and **Helvetica or Arial** font should be used for any text and number. These should be well visible (refer to literature! Look at papers!). Line or stroke width should not be narrower than half a point, and gray fills should be kept at least 20% different from other fills and no lighter than 10% or darker than 80%. You can use colors. Remember, for your files, that, if you want to publish, files should be provided in accordance with the following:

- For color figures, the resolution should be 300 dpi.
- For black and white figures, the resolution should be 500 dpi.
- For line-art figures, the resolution should be 1,000 dpi.
- Always include/embed fonts and only use Helvetica or Arial fonts.
- Limit vertical space between parts of an illustration to only what is necessary for visual clarity.
- Line weights should range from 0.35 to 1.5 pt.
- When using layers, reduce to one layer before saving your image (Flatten Artwork).
- A scale bar, rather than magnification, must be provided for any micrographs.

Supplemental Figures (format as Main Figures)

Figures that are not key for the reader (negative results, data similar to other, controls....). Refer to papers ...

Supplemental Information ((format as Main Text)

Journals have size limit for the text. Here additional information regarding Results that is useful, but not key for the manuscript, should be placed.

DETAILED ISTRUCTIONS FOR WRITING METHODS

For examples of the format of the methods, see any research articles published in *Cell* as of [the August 25 issue](#).

STAR Methods Guide

Cell Press has introduced a new format for reporting methods called **STAR Methods (Structured, Transparent, Accessible Reporting)**, which replaces the Experimental Procedures and Supplemental Experimental Procedures sections.

The STAR Methods section is structured with six headings (in all caps below), including a Key Resources Table that summarizes the critical materials and resources used in the manuscript. There is no character limit.

I. General Instructions: STAR Methods Text

Please report your methods with sufficient detail so readers do not need to refer to other papers to understand how procedures were performed. Citations of previous publications are allowed but should not be used as a substitute for providing the details of a procedure.

References cited in the STAR Methods section and in supplemental files must be included in the main References list.

The STAR Methods text is organized into six standard headings:

EXPERIMENTAL MODEL AND SUBJECT DETAILS
METHOD DETAILS
QUANTIFICATION AND STATISTICAL ANALYSIS
DATA AND SOFTWARE AVAILABILITY
ADDITIONAL RESOURCES
KEY RESOURCES TABLE

To specify the types of experiments and analyses used, authors are encouraged to further organize the text by adding **up to two levels** of subheadings under each heading. Please note:

- (1) Author-added subheadings should be clear and concise and are limited to 45 characters.
- (2) Subheadings should not be numbered.
- (3) Please format each level of subheading with a typeface that is different from the body text and the other subheadings.

See next pages for further details

EXPERIMENTAL MODEL AND SUBJECT DETAILS

**Please omit this section if your study does not use experimental models (e.g., computational studies).*

Please list here under separate headings all of the experimental models (animals, human subjects, plants, microbe strains, cell lines, primary cell cultures) used in the study. For each model, provide information related to their species, maintenance, and care. In cases where this is appropriate, the influence (or association) of sex, gender, or both on the results of the study must be reported.

For in vivo animal studies, reporting of the sex and age/developmental stage of the subjects is required. If there are technical or scientific reasons why sex/gender and age/developmental stage cannot be reported, a statement must be provided to disclose this and the reasons why. We also ask to provide details recommended by [ARRIVE guidelines](#). This includes providing the available and detailed information related to the species, strain and backcrossing status, developmental stage, weight, genotype, health/immune status, drug or test naive, previous procedures, housing, and husbandry. Please note here if the animals were kept under specific conditions (e.g., single/group housed, specific food, temperature, or cage conditions). Also, please describe here how animals were allocated to experimental groups (e.g., littermates of the same sex were randomly assigned to experimental groups). Studies that use live vertebrates must perform their work in accordance with relevant institutional and national guidelines and regulations, and it is required that authors identify here the committee approving the experiments and confirming that all experiments conform to the relevant regulatory standards.

For human studies, the age/developmental stage, sex, and gender identity (if known) of the subjects must be provided. If there are technical or scientific reasons why the sex and/or gender of the subjects cannot be reported, a statement must be provided to disclose this and the reasons why. Please also provide information related to the subjects (e.g., sample size, etc.) or indicate where in the manuscript such information can be found. Studies that work with human subjects are required to provide a statement here identifying the committee approving the studies and confirming that informed consent was obtained from all subjects.

For cell lines, primary cultures, microbe strains, and plants, please describe culture/growth conditions, including temperature. Sex of cells must also be reported. If this is not possible, a statement must be provided to disclose this and the reasons why. Please note here available information about cell authentication. As you may be aware, the practice of cell authentication is becoming more common, and while we understand that this is not yet a standard practice, please indicate whether your cell lines have been authenticated. If so, please describe how.

For all experimental models, we highly recommend including models' RRIDs in their description, as well as using the RRID as the identifier in the Key Resources Table. For more details on how to obtain or generate an RRID for existing or newly generated resources, please visit [visit the RII](#) or [search for RRIDs](#).

For studies that use organisms as source for materials used in experiments (e.g., crystallography, biochemistry, in vitro studies), please provide details on the source organism (e.g., strain, growth/husbandry conditions, sex, age, etc.).

METHOD DETAILS

Please provide precise details of all the procedures in the paper (behavioral task, generation of reagents, biological assays, modeling, etc.) such that it is clear how, when, where, and why procedures were performed. We encourage authors to provide information related to the experimental design as suggested by [NIH](#) and [ARRIVE](#) guidelines (e.g., information about replicates, randomization, blinding, sample size estimation, and the criteria for inclusion and exclusion of any data or subjects).

Computational models and chemical synthesis details may also be presented in this section. However, if it is difficult to present the details of the computational models and/or chemical synthesis without the use of extensive tables or figures, please contact your handling editor for guidance on how to proceed.

QUANTIFICATION AND STATISTICAL ANALYSIS

Please describe here all of the statistical analysis and software used. We ask authors to indicate in this section where all of the statistical details of experiments can be found (e.g., in the figure legends, figures, Results, etc.), including the statistical tests used, exact value of n, what n represents (e.g., number of animals, number of cells, etc.), definition of center, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals). Also please summarize in this section how significance was defined, the statistical methods used to determine strategies for randomization and/or stratification, sample size estimation, and inclusion and exclusion of any data or subjects, as well as any methods used to determine whether the data met assumptions of the statistical approach.

DATA AND SOFTWARE AVAILABILITY

**Please omit this section if your study has not generated datasets or software.*

Datasets must be made freely available to readers from the date of publication. For particular types of data (i.e., DNA and protein sequenced, structures of biological macromolecules, microarray data, etc.), submission of the full dataset to a community-endorsed public repository is mandatory (see [Cell Press Information for Authors](#) for further details). This section provides links to datasets in public repositories, accession numbers, and custom software resources generated in the manuscript.

Software and data resources should be reported by providing a short description of the software or custom script/data resource and the URL to obtain them unless it is provided as a supplemental file. In that case, please report the supplemental file name (i.e., Table S1 if the information is reported in a supplemental table or Data S1 if the data is provided as part of the Supplemental Information PDF or compiled in a standalone ZIP file [which must be <150 MB]). For raw data at repositories that are Force11 compliant (i.e., [Mendeley Data](#)), please provide the DOI.

Please report this information as: “*Description: URL/supplemental file name*” Please provide accession numbers as follows:

“The XXX have been deposited in the XXX under ID codes XXX and YYY.”

ADDITIONAL RESOURCES

**Please omit this section if your study has not generated or contributed to a new website/forum or if it is not part of a clinical trial.*

Please provide links to websites that provide further information relevant to the study (e.g., protocol download, trouble-shooting forum, etc.). Clinical trial registry numbers and links should also be placed here. Please briefly describe the resource and its relevance for the paper. Please report this information as:

“Description: URL”

KEY RESOURCES TABLE

The Key Resources Table serves to highlight materials and resources (including genetically modified organisms and strains, cell lines, reagents, software, experimental models, and original source data for computational studies) essential to reproduce results presented in the manuscript. The items in the table must also be reported alongside the description of their use in the Method Details section. Literature cited within the Key Resources Table must be included in the References list. We highly recommend using RRIDs (see <https://scicrunch.org/resources>) as the identifier for antibodies and model organisms in the Key Resources Table.

Do not add custom headings or subheadings to the Key Resources Table.

To create the Table, please use the provided [Table Template](#).

APPENDIX FOR METHODS

To check whether you included the necessary information, here is a list that highlights key points that should be followed.

EXPERIMENTAL MODEL AND SUBJECT DETAILS

1. Are all experimental models (human, animal, plant, cell line, microbes) listed in this section under separate headings?
2. For **human studies**:
 - a. Is there a statement identifying the committee approving the studies and confirming that informed consent was obtained from subjects?
 - b. Is the sex, gender, and information about age provided here for all study participants, or is it indicated where they can be found? If not, is there a statement of why this data is unavailable?
 - c. Are the sample size and how subjects/samples were allocated to experimental groups specified?
3. For study that works with **live vertebrates**:
 - a. Is the committee approving the experiments identified?
 - b. Is there confirmation that all experiments conform to the relevant regulatory standards?
4. For **animal studies**, is the sex, genotype, age/developmental stage, health status, involvement in previous procedures, and other parameters following [ARRIVE guidelines](#) specified? If not, is there a statement of why this data is unavailable?
5. For studies that include both male and female subjects or tissue from both sexes, please provide an analysis of the influence (or association) of sex, gender, or both on the results of the study, or indicate in the Experimental Model and Subject Details section why such analyses were not performed. If these analyses were not performed but may be pertinent for the generalization of the results to both sexes, consider covering this topic in the Discussion section. Include negative results as well as results that show differences.
6. For **animal and plant studies**, are housing and husbandry conditions specified?
7. For **in vitro studies**, are culture conditions/maintenance specified?
8. For **cell lines and primary cultures**, is the sex reported? If not, is there a statement of why this data is unavailable?
9. Is any available information on **cell line authentication** provided?

METHOD DETAILS

1. Are there method-specific descriptive subheadings provided (must be less than 45 characters, no parenthetical text, and not numbered)?
2. Is there detailed information on the methods such that it is clear how and why procedures or analysis were conducted?
3. Are the methods provided in full, instead of referring to other papers for details?
4. For experiments in which temperature may impact results (e.g., electrophysiology, behavior of subjects or materials, binding assays), is the temperature provided?
5. Are the references cited provided in the References list?
6. Is there information related to **experimental design**?
 - a. Replication
 - b. Strategy for randomization and/or stratification
 - c. Whether the study was done blinded
 - d. Inclusion and exclusion criteria of any data or subjects
 - e. Sample size estimation and statistical method of computation

QUANTIFICATION AND STATISTICAL ANALYSIS

1. Is there an explanation of the statistical analysis used to quantify data?
2. Is there a statement of where the statistical parameters (i.e., exact value of n, what n represents, SEM, SD, etc.) are reported in the paper?
3. Is there a statement of whether any methods were used to determine whether the data met assumptions of the statistical approach?

DATA AND SOFTWARE AVAILABILITY

1. Are datasets **newly** generated in this study described, and are the links (e.g., Mendeley data, repository of raw data) provided here and in the KRT?
2. For data required to be deposited in community-endorsed repositories (i.e., sequences, structures of biological macromolecules, microarray data), is an **accession number** provided here and in the KRT?
3. Are custom scripts, software, or algorithms generated in the study listed here and in the KRT, with a link to the source? *Software not generated in the study needs to be listed only in the Key Resources Table.*

ADDITIONAL RESOURCES

1. If there are websites or resources (i.e., protocol site, forum) that have been created or further expanded by this study to provide further information or support relevant to the paper, is this information and links reported?
2. If relevant, are the **clinical registry numbers** and links associated with study provided?

KEY RESOURCES TABLE (KRT)

1. Are all of the items in the KRT also mentioned in the Method Details or main text of the manuscript?
2. Are all of the papers that are cited in the KRT included in the References list?
3. Are the source and identifier provided for all resources, if available? (If identifier is not available, "N/A" should appear in the column.)
4. Are the unique identifiers provided for all items listed and clearly labeled? Please see the [Table Template](#) for examples.
6. Are all of the software and algorithms used in the study included in the KRT and provided with links for downloading?
7. Is there only one item per row?
8. Are the descriptions for the items intuitive and informative?

REPORT OF ACTIVITIES

(a single file for the three years to be filled in year after year)

Sapienza, Università di Roma
Ph.D. Course in Cell and Developmental Biology
Cycle

Name of the Ph.D. student

Supervisor

(Affiliation of the supervisor, for external thesis)

Tutor (only in the case for external theses)

SEMINARS *(divided by year, first second and third)*

COURSES AND SCHOOLS *(divided by year, first second and third)*

STAGES *(single section for the three years)*

TEACHING ACTIVITY *(date, details, including the indications of the hours)*

AWARDS, FELLOWSHIPS AND GRANTS *(single section for the three years)*

CONFERENCE ORAL PRESENTATIONS *(single section for the three years)*

CONFERENCE COMMUNICATIONS *(single section for the three years)*

LIST OF PUBLICATIONS *(single sections for the three years)*

Style according to the guidelines described above

ADDITIONAL INFORMATION (optional)

.....

COMPILATION OF THE ONLINE FORM

- access INFOSTUD
- enter your credentials (usually the same as for INFOSTUD – matricola and password);
- click on DOCTORATES and then proceed to fill in the activity sheet, with the information at your disposal, indicating the hours of attendance, the seminars and courses attended (for example: participation certified to seminars, cycles of lessons or schools on topics related to the topics of the course) and any other doctoral training activities (from courses in foreign languages or methodology to the preparation of articles or reviews, etc.); your research activity in a non-telegraphic and repetitive but discursive manner (usually three-four lines of text, in English, in third person. Examples are reported below), and all other requested information.....
- inside the form you will find a link to the IRIS research catalog in which you will have to insert your publications following the instructions attached to this communication.
- press Send form.

For the 2022, the form was to be completed in February 2023.

Please note that regardless of this deadline, the IRIS catalog is always open and it is therefore possible to integrate the database with your publications at any time.

I trimestre	Characterization and set up of the SH-SY5Y neuroblastoma differentiation protocol (first cellular model used for the project); subsequent introduction of a cellular model (neuroblastoma x spinal cord, NSC-34) more suitable for the study of the disease of interest (ALS) and fine-tuning of motor neuron differentiation.
II trimestre	Introduction of the in vivo model (SOD1-G93A mice) of the disease. Setting up of the isolation and extracellular vesicles from plasma of WT and mutated mice and from motor neuron cells and subsequent morpho-quantitative characterization through a combined approach of transmission electron microscopy (TEM) and high-resolution techniques such as atomic force (AFM); molecular characterization of the fractions isolated from all experimental groups (vesicle markers detected by western blot).
III trimestre	Setting up of the isolation protocol of skeletal muscle vesicles from WT and SOD1-G93A mice and subsequent morphological and morpho-quantitative characterization. Introduction of the in vitro muscle counterpart (C2C12 myoblasts) and set up of differentiation into myotubes to test effects of vesicles isolated from mouse plasma and muscle on motor neurons (NSC-34) and myotubes (C2C12).
IV trimestre	Characterization of the effects of vesicles isolated from plasma and muscle from in vivo models (SOD1-G93A mice) on their in vitro counterparts (NSC-34 motor neuron cells and C2C12 muscle cells) in terms of cell damage, in particular apoptosis, neurite reduction and oxidative stress in motor neurons and first characterization of oxidative stress on myotubes.

I trimestre	The research activity on the <i>lsm4</i> mutant of <i>Saccharomyces cerevisiae</i> was continued, testing the viability and activation of autophagy during chronological aging and after treatment with low-dose rapamycin. Genome editing experiments with CRISPR/Cas9 were continued to obtain the mutant at the genomic level. The presence of RNA was examined in the supernatants of cultures immobilized in alginate beads. The cloning of specific short hairpin sequences for <i>IL1-B</i> mRNA was carried out, then transformed into yeast and tested on the cell lines of prof. Rita Businaro.
II trimestre	The study of the RNAs of the supernatants was continued, by using the extraction from a solid plate. Viability tests were conducted in nitrogen-free soil. The arsenic-responsive <i>ACR3</i> promoter was cloned into a GFP reporter plasmid and the amount of arsenic needed to visualize GFP by Western Blot tested. Subsequently, the <i>ACR3-GFP</i> construct was inserted into <i>ADE2</i> at the genomic level with CRISPR/Cas9. A collaboration has been started with
III trimestre	Real-time PCR assays were performed for <i>LSM4</i> gene expression in the mutant in different media with different carbon sources. ROS and nuclear fragmentation in the mutant were analysed. The <i>lsm4-GFP</i> mutant was obtained at the genome level on strain BY4741 by CRISPR/Cas9. The preparation of yeast cultures expressing specific short hairpins against <i>Daf16</i> and <i>Skn1</i> of <i>C. elegans</i> was started in collaboration with.....
IV trimestre	The edited strain <i>ade2/ACR3-GFP</i> was studied for the creation of a biosensor, through Western blot and fluorescence microscopy analysis with different concentrations of the element to be detected, at different times and with different growth methods (in tube aerated, multiwell plate, medium or agarose coated slide). The Real Time PCR trials on the <i>LSM4</i> mutant were continued. The sensitivity to H_2O_2 of the <i>lsm4-GFP</i> mutant was analyzed, and the analysis of supernatant RNAs was continued using filters with different sieves to evaluate the association with possible extracellular vesicles.

Instructions for the preparation of the thesis (pdf file to be sent to the external reviewers)

Suggestions by Sapienza: <https://www.uniroma1.it/en/pagina/thesis-layout-and-logo>

Character: preferably Arial for headings and Palatino Lynotype for the body;

- **Text size:** 10-12
- **Headings and subheadings:** 16-14-12
- **Notes:** 9 (you can use italics for notes)
- **Borders** depends on the length of the thesis; suggested 2.5 cm
- **Lead:** 1-1,5
- **Text in Figures:** Helvetica o Arial, well readable
- **Spacing 1.15**

The thesis will be drawn up with the structure of the final format, and must include an "Aim (s) of the work" section (max 2 pages). before the Results or the first chapter, if the thesis is divided into chapters.

If divided into chapters, it may include a "General Introduction" section before the Aim of the work and a "General conclusions and Perspectives" section after the last chapter.

ATTENTION: Figures and tables **will be included in the text and not** placed after "references"

"Supplemental" sections may be included.

The materials and methods can be presented separately by chapter or in a single section after the "General conclusions and Perspectives" section.

The bibliography can also be presented separately by chapter or in a single section before the bibliography. It is advisable to learn to use a Bibliography management software (EndNote or Zotero or analogs)

It is strongly recommended to write the thesis in style "submission for a paper" !!! The recommended text lengths are shown below.

Suggested format

Cover page

- Index
- Brief summary of the whole work (max 300 words)
- Synopsis of the whole work, 2 pages max; this will be saved **also** in a separate file to be loaded for the reviewer and the committee of the final exam)
- General Introduction (if thesis is divided into different parts; optional)
- Aims of the work

For each part:

- **Summary (max 300 words)**
- Introduction (max 1200 words)
- Results
- Discussion
- Material and methods
- References
- Supplemental Information, including supplemental references
- Supplemental Tables and Figures
- Glossary (optional)

- General conclusions and perspectives ((if the thesis is divided into different parts; optional)